

### Abstract

The present invention has been achieved to provide a novel optical transmission system realizing high-speed optical transmission over greater distance by suppressing waveform degradation caused by mode dispersion and mode transition in a multimode optical transmission line. The optical transmission system of the present invention includes: an optical transmitter for transmitting incoherent light; an excitation mechanism for exciting a predetermined mode in the incoherent light transmitted from the optical transmitter; a multimode optical transmission line for transmitting the incoherent light transmitted from the excitation mechanism; a transmission mechanism for transmitting a predetermined mode in the incoherent light transmitted from the excitation mechanism; and an optical receiver for receiving the incoherent light transmitted from the transmission mechanism or the incoherent light transmitted from the transmission mechanism.